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BAKER BOTTS L.L.P.			DYKE, KERRI M	
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DATE MAILED: 02/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/035,353	<b>Applicant(s)</b> BARRASS ET AL.	
	<b>Examiner</b> Kerri M. Dyke	<b>Art Unit</b> 2667	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 January 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-51 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15-17 and 46-49 is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 7, 10-14, 18, 20-23, 30 and 36-45 is/are rejected.
- 7) ☒ Claim(s) 4, 6, 8, 9, 24-29, 31, 32, 34, 35, 50 and 51 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                            | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments, see page 14, filed 1/12/2006, with respect to 35 U.S.C. rejection of claims 12 and 23 have been fully considered and are persuasive. The rejection of claims 12 and 23 has been withdrawn. The cited cases themselves were not found to be persuasive. Both *Eastwood* and *Gore v. Garlock* used about when citing continuous ranges. For example, in the case of *Eastwood* the court held that one of ordinary skill would recognize that 44.99%, for example, is about 45%. In this case the number of ports is a discrete number. One of ordinary skill would not recognize 11 ports to be approximately 12 ports. Also, one of ordinary skill, from the claim alone, is left to question whether 12 and 32 are included in the range. The rejection has been withdrawn, however, because when reviewing the cited cases the Examiner was reminded that, although limitations from the specification are not read into the claims, the claims are read in light of the specification. Specific examples for an analog switch of 1x12 ports and 1x32 ports are given in the specification on page 8. In light of this, the examiner believes one of ordinary skill in the art would interpret the range of claims 12 and 23 as 12-32 inclusively.

2. Applicant's arguments with respect to claims 1-49 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. ***Claims 1, 2, 5, 7, 10-14, and 30 are rejected under 35 U.S.C. 102(e) as being anticipated by Wu et al. (US 6,990,095).***

5. Note the following teachings about apparatus/device claims from the MPEP: The teaching of MPEP 2112.02 is: The discovery of a new use for an old structure based on unknown properties of the structure might be patentable to the discoverer as a process of using. In re Hack, 245 F.2d 246, 248, 114 USPQ 161, 163 (CCPA 1957). However, when the claim recites using an old composition or structure and the “use” is directed to a result or property of that composition or structure, then the claim is anticipated. In re May, 574 F.2d 1082, 1090, 197 USPQ 601, 607 (CCPA 1978). The similar teaching of MPEP 2113 is: An apparatus claim does not give patentable weight to recited functionality, see MPEP § 2113. See also *Hewlett-Packard Co. v Bausch & Lomb, Inc.* 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990), where it is stated that “apparatus claims cover what a device *is* not what a device *does* (emphasis in original).” The structural limitations of each claim apparatus claim below is bolded and the functional limitations are not considered.

6. In regards to claim 1, Wu discloses a **solid-state crossbar switch** for transmitting data traffic, comprising:

- a. **A first number of input ports**, each input port operable to receive DSL data from a data switch; (column 1 lines 44-45, 56)
- b. **A second number of output ports**, each output port capable of being couples to a customer premise equipment (CPE) device; (column 1 lines 44-45, 56)

- c. **A third number of 1xN solid-state analog switches**, each 1xN solid state analog switch operable to couple one of the input ports with N output ports. (column 1 line 60 – column 2 line 2 discloses M switching planes operable to connect at least one input to all of the output ports. Therefore the switches are at least 1xN, although they can be any number of Y inputs.)
7. In regards to claim 2, Wu disclose the crossbar switch of claim 1, wherein **each input port is coupled to one of the 1xN solid-state analog switches**. Column 1 lines 62-65 disclose that each input port is coupled to one of the switches.
8. In regards to claim 5, Wu discloses the crossbar switch of claim 1, wherein **the first number is twenty-three**. Wu discloses N1 input ports in column 1 line 56. Since there is no limiting range for the number N1 it is implicitly disclosed as encompassing all possible number of input ports.
9. Claims 7 and 10 are rejected upon the same grounds as claim 5.
10. In regards to claim 11, Wu discloses the crossbar switch of claim 1, wherein **the second number is ninety-six**. Wu discloses N2 output ports in column 1 line 56. Since there is no limiting range for the number N2 it is implicitly disclosed as encompassing all possible number of output ports.
11. In regards to claim 12, Wu discloses the crossbar switch of claim 1, wherein **N is approximately between twelve and thirty-two**. Column 1 line 67 – column 2 line 1 discloses that the number of outputs for the 1xN switch is equal to the number of outputs, N2 disclosed in column 1 line 56. Since there is no limit on N2, it encompasses the range 12-32 and as the number  $N=N_2$ , N inherently encompasses the same range.

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12. Claims 13 and 14 are rejected upon the same grounds as claim 12.
13. In regards to claim 30, Wu discloses an apparatus for transmitting DSL data between a data switch and a CPE device using a solid-state crossbar switch, comprising:
- d. Means for receiving DSL data from the data switch at a **first number of input ports**;
  - e. Means for receiving the DSL data from the input ports at a **second number of 1xN solid-state analog switches, wherein each 1xN solid-state analog switch comprises N outlets**;
  - f. Means for switching the DSL data received at each analog switch to an outlet of each analog switch; and
  - g. Means for receiving the switched DSL data at a **third number of output ports**, each output port capable of being couple to a CPE device.

The structure of claim 30 is the same as that of claim 1 and it is rejected upon the same grounds.

***Claim Rejections - 35 USC § 103***

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. ***Claims 3, 36-39, and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu et al. (US 6,990,095) in view of Lim (US 6,970,458).***

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16. In regards to claim 3, Wu discloses the crossbar switch of claim 1, but not wherein the second number of output ports is greater than N.

Lim discloses the second number of output ports being greater than N in figure 2 and 4B. The first stage has a number of inputs, (2 in figure 2 and 1 in figure 4B). The inputs of the first stage are output to a middle stage. The number of outputs from the first stage is less than the number of middle stages. In this way, Lim discloses efficiently increasing the capacity.

It would have been obvious to one of ordinary skill in the art to modify Wu's switch to include the middle stage of Lim because doing so allows for an efficient increase of switch capacity, as taught by Lim in column 2 lines 25-29.

17. In regards to claim 36, Wu discloses a crossbar switch for transmitting data traffic, comprising:

- h. **A first number of input ports**, each input port operable to receive data from a data switch;
- i. **A second number of output ports**, each output port capable of being couple to a customer premise equipment (CPE) device; and
- j. **A third number of 1xN analog switches**, each 1xN analog switch operable to couple one of the input ports with N output ports. (See claim 1 rejection.)

Wu does not disclose **wherein N is less than the second number**.

Lim discloses the second number of output ports being greater than N in figure 2 and 4B. The first stage has a number of inputs, (2 in figure 2 and 1 in figure 4B). The inputs of the first stage are output to a middle stage. The number of outputs from the first stage is less than the number of middle stages. In this way, Lim discloses efficiently increasing the capacity.

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It would have been obvious to one of ordinary skill in the art to modify Wu's switch to include the middle stage of Lim because doing so allows for an efficient increase of switch capacity, as taught by Lim in column 2 lines 25-29.

18. In regards to claims 37-39, see the rejections of claims 10, 11, and 13 respectively.

19. In regards to claim 44, Wu discloses an apparatus for transmitting data between a data switch and a CPE device using a crossbar switch, comprising:

- k. Means for receiving data from the data switch at **a first number of input ports**;
- l. Means for receiving the data from the input ports at **a second number of  $1 \times N$  analog switches, wherein each  $1 \times N$  analog switch comprises  $N$  outlets**;
- m. Means for switching the data received at each analog switch to an outlet of each analog switch; and
- n. Means for receiving the switched data at **a third number of output ports**, each output port capable of being coupled to a CPE device. (See claim 1 rejection.)

Wu does not disclose wherein **the third number is greater than  $N$** .

Lim discloses the second number of output ports being greater than  $N$  in figure 2 and 4B. The first stage has a number of inputs, (2 in figure 2 and 1 in figure 4B). The inputs of the first stage are output to a middle stage. The number of outputs from the first stage is less than the number of middle stages. In this way, Lim discloses efficiently increasing the capacity.

It would have been obvious to one of ordinary skill in the art to modify Wu's switch to include the middle stage of Lim because doing so allows for an efficient increase of switch capacity, as taught by Lim in column 2 lines 25-29.



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**20. Claims 18, 21-23, and 40-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu et al. (US 6,990,095) in view of Burd et al. (US 6,874,041).**

21. In regards to claims 18 and 40, Wu discloses a method for transmitting DSL data between a data switch and a CPE device using a solid-state crossbar switch comprising:

- o. Receiving data from the data switch at a first number of input ports; (column 1 lines 44-45, 56)
- p. Receiving the data from the input ports at a second number of 1xN solid-state analog switches, wherein each 1xN solid-state analog switch comprises N outlets; (column 1 line 60 – column 2 line 2 discloses M switching planes operable to connect at least one input to all of the output ports. Therefore the switches are at least 1xN, although they can be any number of Y inputs.)
- q. Switching the data received at each analog switch to an outlet of each analog switch; and (The function of a switch is to switch data received at the input to an output, therefore data received at the analog switch will inherently be switched to an outlet.)
- r. Receiving the switched data at a third number of output ports, each output port capable of being coupled to a device. (column 1 lines 44-45, 56)

A switch is built for the purpose of receiving and sending data. Wu does not, however, disclose the data as DSL data. The output ports will also inherently be coupled to a device which can make use of the output signal, but Wu does not disclose the device as a CPE device.

Burd discloses a CPE device connected to the output of a switch in column 3 lines 5-8.

Burd further discloses the CPE device receiving DSL signals in column 3 lines 20-21. In order

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for the CPE device to receive DSL data the input ports of the data switch must receive DSL data. The switch only routes inputs to outputs. It does not change the type of data during the routing.

It would have been obvious to one of ordinary skill in the art to modify Wu's switch in order to couple with Burd's CPE device because Burd's CPE device is capable of self-configuration for use with many different protocols, which saves time and money, disclosed in column 2 line 47 – column 3 line 2 and because Wu's switch is capable of working with different protocols, as disclosed in column 1 lines 47-49.

22. In regards to claim 19, Wu and Burd disclose the method of claim 18, wherein each input port is coupled to one of the analog switches. In order for the switch to function properly each input port must be coupled to one of the analog switches.

23. Claims 21-23 and 41-43 are rejected upon the same grounds as claim 10-12 respectively.

24. Claim 33 is for logic encoded in media operable to perform the steps of claim 18 Logic encoded in media is not limited to "software" interpretations such as hard-drives, cache, and portable CDs. Logic encoded in media includes hardware such as AND, NAND, and OR gates, for example. Wu states in column 1 lines 40-42 that a processor is not used and some of gating logic is seen in figures 3 and 6.

25. *Claims 20 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu et al. (US 6,990,095) in view of Burd et al. (US 6,874,041) further in view of Lim (US 6,970,458).*

26. In regards to claim 20, Wu and Burd disclose the method of claim 18, but not wherein the third number of output ports is greater than N.

Lim discloses the second number of output ports being greater than N in figure 2 and 4B. The first stage has a number of inputs, (2 in figure 2 and 1 in figure 4B). The inputs of the first stage are output to a middle stage. The number of outputs from the first stage is less than the number of middle stages. In this way, Lim discloses efficiently increasing the capacity.

It would have been obvious to one of ordinary skill in the art to modify Wu's switch to include the middle stage of Lim because doing so allows for an efficient increase of switch capacity, as taught by Lim in column 2 lines 25-29.

27. Claim 45 is for logic encoded in media operable to perform the steps of claim 18 Logic encoded in media is not limited to "software" interpretations such as hard-drives, cache, and portable CDs. Logic encoded in media includes hardware such as AND, NAND, and OR gates, for example. Wu states in column 1 lines 40-42 that a processor is not used and some of gating logic is seen in figures 3 and 6. Wu and Burd do not disclose wherein the third number of output ports is greater than N.

Lim discloses the second number of output ports being greater than N in figure 2 and 4B. The first stage has a number of inputs, (2 in figure 2 and 1 in figure 4B). The inputs of the first stage are output to a middle stage. The number of outputs from the first stage is less than the number of middle stages. In this way, Lim discloses efficiently increasing the capacity.

It would have been obvious to one of ordinary skill in the art to modify Wu's switch to include the middle stage of Lim because doing so allows for an efficient increase of switch capacity, as taught by Lim in column 2 lines 25-29.

***Allowable Subject Matter***

28. Claims 4, 6, 8, 9, 24-29, 31, 32, 34, 35, 50, and 51 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

29. Claims 15-17 and 46-49 are allowed.

30. The following is a statement of reasons for the indication of allowable subject matter:

s. Claims 4, 15, 24, 31, 34, 50, and 51 include a sweeper port. Claims 6, 8, 28, 32, and 35 each include a catcher port. Neither of these ports is taught or suggested by the prior art. Lim must have some sort of monitoring system to determine when the network should be increased, but there is no teaching about the method. Claim 9 depends from claim 8. Claims 16 and 17 depend from claim 15. Claims 25-27 depend from claim 24. Claim 29 depends from claim 28.

t. Claim 46 includes 1x16 switches. Wu discloses that the analog switch is coupled to every output, which is recited to be 96 in the claim. Lim discloses the relationship of  $n \times 2n$  for the switches. Therefore, the prior art neither teaches nor suggests the limitations of 22 input ports, 96 output ports and 24 1x16 switches. Claims 47-49 depend from claim 46.

***Conclusion***

31. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Michaelwicz (US 6,826,708, which was included in the previous citation of art) provides an example listing of logic encoded in media in column 5 lines 49-55. Logic gates are included in the listing.

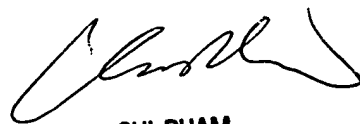
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kerri M. Dyke whose telephone number is (571) 272-0542. The examiner can normally be reached on Monday through Friday, 7:00 am - 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on (571) 272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

kmd

  
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2/3/06